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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,812	09/21/2004	Takakiyo Kanazawa	SON-2651	5948

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EXAMINER	
GUPTA, PARUL H	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/508,812	KANAZAWA ET AL.	
	Examiner	Art Unit	
	Parul Gupta	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *12 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15 and 17-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15 and 17-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 are pending for examination as interpreted by the examiner. The amendment filed on 9/11/06 was considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-7, 15, and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao et al. in view of Misawa et al., US Patent 4,876,680.

Regarding claim 1, Nakao et al. teaches in figure 1 an optical pickup apparatus comprising: an optical pickup including an optical pickup body having a substrate (2), a light source attached to said substrate (1), a light receiving element (3) attached to said substrate and an optical member (4-7) attached to said substrate, and an objective lens (shown more clearly as element 12 of figure 13) and a slider ("flying slider" of element 17 as shown more clearly in figure 10B) attached to said optical pickup body, wherein said optical pickup is configured such that said slider is opposed to a recording face of an optical disk (element 13 of figures 10B) and said optical pickup is levitated along a thicknesswise direction of the optical disk by an air flow formed between said slider and the recoding face (between elements 17A and 13 of figure 10B), said optical member is configured such that a light beam emitted from said light source is illuminated on the recording face (element 13 of figure 13) through said objective lens (element 12 of

figure 13) and the reflected light beam reflected by the recording face is received by said light receiving element (3) through said objective lens, and said optical member (4-7) is provided in a state wherein said optical member closely contacts with said light source (1), objective lens and light receiving element without a gap left therebetween (as it is part of the same substrate, there is no gap left therebetween), wherein, said optical member (4-7) is in the form of a rectangular plate and is attached at one of two mutually opposing faces thereof to said substrate (2) while said objective lens (9) is attached to the other of the two mutually opposing faces of said optical member, and said light source (1) is attached to a face of said optical member. Although there is no mention in Nakao et al. of the plate being rectangular, this is merely a matter of design choice. Nakao does not but Misawa et al. teaches in figure 9 that the light source (11) is perpendicular to the one face and the other face of the optical member (13). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of the light source being perpendicular to the optical member as taught by Misawa et al. into the system of Nakao et al. The motivation would be to make the vertical size of the optical pickup shorter (column 8, lines 24-26 of Misawa et al.).

Regarding claim 15, Nakao et al. teaches in figure 1 an optical disk apparatus comprising: driving means for holding and driving an optical disk to rotate (function performed by element 37 of figure 16); and an optical pickup apparatus (element 17(100,101) of figure 16) for illuminating light on the optical disk driven to rotate by said driving section and detecting reflected light from the optical disk; said optical pickup apparatus including: an optical pickup having an optical pickup body having a substrate (2), a light source (1) attached to said substrate, a light receiving element (3) attached

to said substrate and an optical member (4-7) attached to said substrate, and an objective lens (shown more clearly as element 12 of figure 13) and a slider ("flying slider" of element 17 as shown more clearly in figure 10B) attached to said optical pickup body, wherein said optical pickup being configured such that said slider is opposed to a recording face of an optical disk (element 13 of figures 10B) and said optical pickup is levitated along a thicknesswise direction of the optical disk by an air flow formed between said slider and the recoding face (between elements 17A and 13 of figure 10B), said optical member being configured such that a light beam emitted from said light source is illuminated on the recording face(element 13 of figure 13) through said objective lens (element 12 of figure 13) and the reflected light beam reflected by the recording face is received by said light receiving element (3) through said objective lens, and said optical member (4-7) is provided in a state wherein said optical member closely contacts with said light source (1), objective lens and light receiving element without a gap left therebetween (as it is part of the same substrate, there is no gap left therebetween), wherein, said optical member (4-7) is in the form of a rectangular plate and is attached at one of two mutually opposing faces thereof to said substrate (2) while said objective lens (9) is attached to the other of the two mutually opposing faces of said optical member, and said light source (1) is attached to a face of said optical member perpendicular to the one face and the other face. Although there is no mention in Nakao et al. of the plate being rectangular, this is merely a matter of design choice. Nakao does not but Misawa et al. teaches in figure 9 that the light source (11) is perpendicular to the one face and the other face of the optical member (13). It would have been obvious to one of ordinary skill in the art at the time of the invention to

include the concept of the light source being perpendicular to the optical member as taught by Misawa et al. into the system of Nakao et al. The motivation would be to make the vertical size of the optical pickup shorter (column 8, lines 24-26 of Misawa et al.).

Regarding claims 3 and 17, Nakao et al. teaches in figure 1 the optical pickup apparatus wherein, said light source (1) is attached to said substrate (2), and a surface of said light source which is exposed to the outside while said light source is attached to said optical member is covered with anticorrosion means for blocking the surface from the external air (shown in figures 4A to 6B and explained further in column 6, lines 24-49).

Regarding claims 4 and 18, Nakao et al. teaches in figure 1 the optical pickup apparatus, wherein said anticorrosion means is made of a synthetic resin material (shown in figures 4A to 6B and explained further in column 6, lines 24-49). The given section explains the anticorrosion means, which serve the same purpose as the synthetic resin material.

Regarding claims 5 and 19, Nakao et al. teaches in figure 1 the optical pickup apparatus wherein, said light source (1) includes a light emitting element for emitting the light beam, a photo-detector (3) for monitoring the light beam emitted from said light emitting element, and a mount member attached to said substrate (2) and having said light emitting element and said photo-detector mounted thereon, that surfaces of said light emitting element, photo-detector and mount member which are exposed to the outside while said mount member is attached at a lower face (area between elements 2 and 1 or 3) thereof to said substrate and the light emitting face of said light emitting element and a front face of said mount member are attached to said optical member are

covered with said anticorrosion means, and that said anticorrosion means is formed from a transparent synthetic resin material through which the light beam emitted from said light emitting element can pass (shown in figures 4A to 6B and explained further in column 6, lines 24-49). Although the photodectors are not specified as being for monitoring the light beam, using them for that purpose would be obvious to one of ordinary skill in the art.

Regarding claims 6 and 20, Nakao et al. teaches the optical pickup apparatus wherein, connection terminals for inputting a driving signal are provided on said light emitting element while electric terminals for relaying the driving signal are provided on said substrate, and said connection terminals and said electric terminals are covered with said anticorrosion means. Column 11, lines 4-13 give the necessary connection terminals. Although it is not specified how they are covered with anticorrosion means, the fact that the details of protecting the light source are given makes it obvious to one of ordinary skill in the art at the time of the invention to protect all elements exposed to air in the same way.

Regarding claims 7 and 21, Nakao et al. teaches in figure 1 the optical pickup apparatus wherein, said objective lens is provided integrally with an objective lens plate (9), and said objective lens plate is attached at one face thereof to said optical pickup body (top) while said slider is attached to the other face of said objective lens plate (via element 17A of figure 10B).

3. Claims 8-14 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao et al. in view of Misawa et al., further in view of Crane et al., US Patent 6,078,473.

Regarding claims 8 and 22, Nakao et al. in view of Misawa et al. teaches the limitations of claims 1 and 15. Nakao et al. in view of Misawa et al. does not but Crane et al. teaches the optical pickup apparatus wherein, said optical pickup apparatus comprises a resiliently deformable support plate (22 of figure 3) in the form of a small-width plate having said optical pickup attached to an end in a longitudinal direction thereof, and said support plate has a thermal conductivity and a heat radiating property (column 2, lines 6-10 explain that the flexure is conductive). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of the given support plate as taught by Crane et al. into the system of Nakao et al. in view of Misawa et al. The motivation would be to ensure that force is carried equally by all elements in the apparatus and to ensure that the support plate is conductive (column 6, lines 1-33 of Crane et al.).

Regarding claims 9 and 23, Crane et al. teaches the optical pickup apparatus wherein, said support plate has a heat radiating fin (elements 174 and 176 of figure 13) provided thereon in a projecting manner in a direction in which said radiating fin approaches the recording face.

Regarding claims 10 and 24, Crane et al. teaches the optical pickup apparatus wherein, said support plate is made of a material of copper or iron which has copper plated thereon (column 6, lines 22-33).

Regarding claims 11 and 25, Crane et al. teaches the optical pickup apparatus wherein, said optical pickup apparatus further comprises a resiliently deformable load beam (18 of figure 3) in the form of a small-width plate having said support plate attached to one end in a longitudinal direction thereof, and said load beam transmits

and radiates heat from said light source rapidly (column 2, lines 6-10 explain that the flexure is conductive). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of the given load beam as taught by Crane et al. into the system of Nakao et al. in view of Misawa et al. The motivation would be to ensure that force is carried equally by all elements in the apparatus and to ensure that the load beam is conductive (column 6, lines 1-33 of Crane et al.).

Regarding claims 12 and 26, Crane et al. teaches the optical pickup apparatus wherein, said load beam has a heat radiating fin (elements 174 and 176 of figure 13) provided in a projecting manner in a direction in which said load beam approaches the recording face.

Regarding claims 13 and 27, Crane et al. teaches the optical pickup apparatus wherein, said load beam is made of a material of copper or iron which has copper plated thereon (column 6, lines 22-33).

Regarding claims 14 and 28, Crane et al. teaches in figure 7 the optical pickup apparatus wherein, a gap is formed between said support plate (22) and said load beam (18) and filled with grease for transmission of heat (column 5, lines 32-45).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
10/16/06

ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER